



## Subject: OOP Practicals (306)

1. An electricity board charges the following rates to user.
  - For the first 100 units – 60p per unit.
  - For the next 200 units – 80p per unit.
  - Beyond 300 units – 90p per unit.All users are charged a minimum of Rs. 50; if the total amount is more than 300 then an additional surcharge of 15% is added. Write a program to accept name of user with units consumed and print out charges with their rates.
2. Write a menu-driven program for the following function overloading (**draw()**):
  - (i) Calculate area of rectangle
  - (ii) Calculate area of Triangle
  - (iii) Calculate area of Circle
3. Define a class to represent a bank account. Include the following members:
  - a. Name of the depositor
  - b. Account number
  - c. Type of Account
  - d. Balance amount in the Account

**Design following Member Functions:**

  - a. To assign initial values (use default constructor and parameterized constructor)
  - b. To deposit an amount
  - c. To withdraw an amount after checking the balance
  - d. To display name and balance

(If the amount withdrawal is more than the balance in account, display a message "**Cannot Withdraw - Balance is low**")
4. WAP to create a **TIME** class which contains **hours** and **minutes** as data members. Make Member functions for overloading "+" operator to add two Objects of Time class.

E.g. 1: If T1 represents 1 hr 30 mins and T2 represents 2 hr 45 mins then  
 $T3 = T1 + T2$  // Statement will give output 4 hr 15 mins .

E.g. 2: If T1 represents 1 hr 30 mins and T2 represents 100 mins then  
 $T3 = T1 + T2$  // Statement will give output 3 hr 10 mins . (Use overloaded constructors)

**(Initialize Objects using Constructors). Also make Member functions for Display.**
5. WAP for counter class which increments counter variable using unary ++ operator.
6. Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive to specific classes called triangle and rectangle from the base shape. Add to the base class a member function `getdata()` to initialize base class data members and another member function `disp_area()` to compute and display the area of figures. Make `disp_area()` as a virtual function and redefine this function in derived classes to suit their requirements.

Using these three classes, design a program that will accept dimension of a triangle and rectangle interactively, and display the area (Area of rectangle= $x*y$ , Area of triangle= $1/2*x*y$ ).